



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/738,051	12/15/2000	Toshikazu Funahara	36856.415	2326

7590 01/03/2003

KEATING & BENNETT LLP  
Suite 312  
10400 Eaton Place  
Fairfax, VA 22030

[REDACTED] EXAMINER

DOUGHERTY, THOMAS M

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2834

DATE MAILED: 01/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/738,051	FUNAHARA ET AL.
Examiner	Art Unit	
Thomas M. Dougherty	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 15 December 2000.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5,8-12 and 15-20 is/are rejected.
- 7) Claim(s) 6,7,13 and 14 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____ .                                   |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8-14 and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim 8 language "each being having" is confusing and not understood. Additionally, "an insular shape" is open ended and invites a nearly infinite variety of shapes. This insular shape is not defined in the description of the drawings and noted only once in the summary of the invention, albeit with no description. Claim 9 indicates that there exists more than a plurality of recesses when it is noted that "said plurality of recesses has a different depth from other of said plurality of recesses" which contradicts claim 8 in which a plurality only is noted.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 8-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Young (US 2,440,709). Young shows (fig. 1) an electronic component module comprising: a circuit substrate (10) having circuit components (20, 28) mounted thereon; and a recess (17, 26) provided in the top surface of said circuit substrate (10), said recess including a plurality of regions (17, 26) where the thicknesses of bottom plates of said recess differ from one another, and said recess including at least one portion of the circuit components mounted on said circuit substrate (10). The top surface of each of the circuit components (20, 28) mounted in said recess (17, 26) is substantially flush with the top surface of said circuit substrate (10). Said circuit components (20, 28) define a quartz vibrator package.

The recess configuration (17, 26) defines a plurality of recesses, each being, as that is best understood, having an insular shape, as best understood, on the top surface of the circuit substrate, and each accommodating a circuit component (20, 28). At least one portion of said plurality of recesses (17, 26) has a depth different from other of said plurality of recesses.

Claims 1-3, 8-11 and 15-20, as some of these claims are best understood, are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Luff (US 6,456,168). Luff shows (fig. 3) an electronic component module comprising: a circuit substrate (190) having circuit components (180, 182, 184) mounted thereon; and a recess provided in the top surface of said circuit substrate (190), said recess including a plurality of regions where the thicknesses of bottom plates of said recess differ from one another, and said recess including at least one portion of the circuit components mounted on said circuit

substrate (190). The top surface of each of the circuit components (180, 182, 184) mounted in said recess is substantially flush with the top surface of said circuit substrate. Said circuit components (180, 182, 184) define a quartz vibrator package.

The recess configuration defines a plurality of recesses, each being, as that is best understood, having an insular shape, as best understood, on the top surface of the circuit substrate, and each accommodating a circuit component (180, 182, 184). At least one portion of said plurality of recesses has a depth different from other of said plurality of recesses.

Luff further shows a vibrator package (112) accommodating a piezoelectric member (170), said vibrator package (112) being stacked on said electronic component module (190), said vibrator package (112) being integrated with said electronic component module (190). Said vibrator package (112) includes a case (112) having an open top surface, said electronic component module being supported at both end portions thereof by said case (112). The piezoelectric oscillator further comprising a shielding plate (160), wherein the entire top surface of the case is covered by the shielding plate (160), such that said electronic component module is hermetically sealed in said vibration package defined by the case and the shielding plate (160).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young (US 2,440,709) or Luff (US 6,456,168) in view of Yamada et al. (US 5,306,948). Given the inventions of Young or Luff as noted above, they fail to show a ceramic substrate. Yamada notes (col. 8, ll. 16-21) a ceramic substrate which is multi-layered. He doesn't show a recess in his electronic component structure. It would have been obvious to one having ordinary skill in the art at the time of the Young or Luff inventions to employ a substrate such as a multi-layered ceramic substrate, as noted by Yamada, because in a multi-layered ceramic substrate it is possible to provide electrical traces on the layers, thereby reducing the number of exposed electrical wires.

***Allowable Subject Matter***

Claims 6, 7, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show or fairly suggest placement of electrodes on four corners of a ceramic substrate package, which package has recesses of different depths and which contains electronic components in the recesses.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining prior art cited reads on at least some aspects of the claimed invention.

Application/Control Number: 09/738,051  
Art Unit: 2834

Page 6

Direct inquiry concerning this action to Examiner Dougherty at (703) 308-1628.

*tmd*

December 31, 2002

*Thomas M. Dougherty*  
PRIMARY EXAMINER  
(703) 308-1628  
*2ECD*